

Serial Number: 10/604,756  
Filed: 8/14/2003

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### Remarks

The Examiner objected to claims 2-9. Informalities identified by the Examiner have been corrected according to the Examiner's suggestion.

The Examiner rejected claims 1-3 and 9 under 35 U.S.C. 102(b) as unpatentable by *Levy*. *Levy* requires a metallic coating 25 or other form of non-dielectric reflective structure of the central portion whereby the central portion functions as the sub reflector of the antenna, reflecting primary microwave energy vectors from the main reflector to the sub reflector focal point at the antenna feed (figure 2, col. 3 ln 54-68). Because the central portion of *Levy* is an RF reflector formed from non-dielectric material, it cannot be characterized as a central portion according to the present invention.

As described in the specification at specification paragraph 20, the present invention reduces antenna return loss characteristics from minor secondary reflections off of the radome, back to the reflector that occur even though the radome surface portions are dielectric material(s). Return losses are minimized by adapting the radius of the radome in the central and outer portions such that these secondary reflections are directed towards the main reflector vertex (central portion) where they may be absorbed or that when further reflected by the reflector are directed away from the subreflector, in general (outer portion), where they will not contribute to return losses of the antenna.

*Levy* teaches nothing whatsoever with respect to reducing return losses of a reflector antenna through improvements in radome design. To distinctly differentiate the present invention from *Levy*, Claim 1 has been amended to clarify that the central portion of the present invention is formed using a dielectric material as described in specification paragraphs 21-22 and figure 3.

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Further with respect to claim 9, referencing "figures 1-5", the Examiner states that *Levy* discloses RF absorbing material located in the vertex area. Applicant respectfully submits that no indication of RF absorbing material appears in the referenced figures. In fact, no reference to RF absorbing material appears in the cited reference, whatsoever.

Because the central portion of *Levy* requires metalising or other non-dielectric additional element and, further with respect to claim 9, because *Levy* does not include RF absorbing material located at the vertex area, each and every element of the present invention fails to appear in the cited reference. Therefore, rejection of claims 1-3 and 9 under 35 U.S.C. 102(b) is improper.

The Examiner rejected claims 4-6, 8, 10-12, 14 and 18-22 under 35 U.S.C. 103(a) as unpatentable over *Levy* in view of *Ellis*. As described herein above, *Levy* fails to disclose, teach or suggest each and every aspect of the independent claim 1 from which claims 4-6 and 8 depend. *Ellis* similarly fails to supply these aspects. Therefore, rejection of dependent claims 4-6 and 8 is improper.

With respect to claims 4-6 and 10, the Examiner admits that *Levy* does not teach that the radome has "a plurality of tabs formed proximate a periphery of the open end of the reflector, the tabs configured to pass through a corresponding plurality of cut outs formed in a periphery of the reflector" and supplies "a plurality of tabs (324-328).. ." of *Ellis* therefore. Applicant respectfully submits that the plurality of tabs (324-328) cited by the Examiner are applied in *Ellis* only for the purpose of attaching mating halves of the radome to *each other*, not for mating the radome to the reflector (fig 15, col. 11, ln 7-67) as claimed. In fact, the only radome to reflector attachment disclosed or suggested in *Ellis*, applies separate threaded clamp members (232, 234, 236, 238) that pass through holes formed in the radome periphery and thread into the reflector (fig 13, 14). There are no tabs formed in the periphery of the radome or mating cut outs in the reflector.

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With respect to claims 8, 11 and 19 the Examiner admits that "Levy does not disclose that the tabs retain the radome on the reflector when the radome is rotated after the tabs are passed through the cut outs" and supplies *Ellis* therefore. As described herein above, the "tabs" cited by the Examiner in *Ellis* have nothing whatsoever to do with retaining the radome upon the reflector. Further, reference to rotation attachment appears nowhere in *Ellis*. The tabs applied in *Ellis* to mate the radome halves together are not attachable via rotation with respect to each other, because the radome halves are not spherical along their mating surfaces (figure 15).

With respect to claim 12, the Examiner admits that "Levy does not disclose a plurality of support posts formed proximate the periphery of the radome which the reflector seats against when the tabs are passed through the cut outs" and supplies *Ellis* therefore. Here the Examiner has failed to make the required specific reference to the claimed limitations. After a thorough review of "figures 4-22" cited by the Examiner, applicant respectfully submits that support posts as claimed fail to appear in the cited reference(s) and requests that the Examiner identify the claimed structure with specificity or withdraw this rejection.

With respect to claim 14, the Examiner admits that "Levy does not disclose that, a plurality of absorbing retainers arranged proximate a periphery of the radome" and supplies *Ellis* therefore. Again, the Examiner has failed to make the required specific reference to the claimed limitations. After a thorough review of "figures 15-22" cited by the Examiner, applicant respectfully submits that absorbing retainers as claimed fail to appear in the cited reference and requests that the Examiner identify the claimed structure with specificity or withdraw this rejection.

With respect to claims 18 and 20-22, the Examiner admits that "Levy does not disclose the reflector and radome having interlocking peripheral structures configured such that said radome is joined to said reflector by mating said structures and rotating said radome relative said

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reflector" and supplies *Ellis* therefore. As described in detail herein above, *Ellis* applies separate threaded clamp members (232, 234, 236, 238) that pass through holes in the radome to retain the radome upon the reflector (fig. 13, 14). Applicant respectfully submits that no reference to interlocking peripheral structures of the radome / reflector which mate upon rotation of the radome relative the reflector appears in *Ellis*, whatsoever. The Examiner has cited "figures 4-22, col.3, lines 59-67 to col. 11, lines 1-34" in support for this rejection, without further specificity. Applicant respectfully requests a more precise citation of exactly which elements / teachings the Examiner is relying upon or withdrawal of this rejection.

Because each and every element of the claimed invention fails to be disclosed, taught or suggested in the cited references, rejection of claims 4-6, 8, 10-12, 14 and 18-22 under 35 U.S.C. 103(a) is improper.

Applicant notes with appreciation the Examiner's indication that claims 7, 13 and 15-17 would be allowable if placed into independent form. Because independent claim 1 from which claims 7 and 13 depend is believed to be allowable in its presently amended form, claims 7 and 13 should also be allowable.

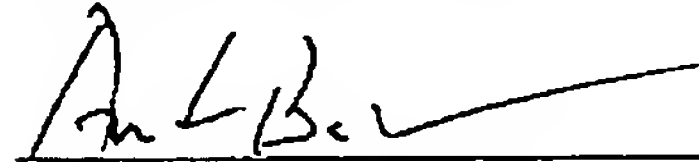
In the Office Action Summary the Examiner indicated that claims 15-17 are allowed. However, the Examiner also included claims 15-17 in the listing of claims objected to for being dependent upon a rejected base claim. Claim 15 as originally filed is an independent claim. Therefore claim 15 and dependent claims thereof 16 and 17 should also be allowable as is.

Having obviated each of the Examiners rejections, applicant respectfully requests that a notice of allowance be issued. Should the Examiner be inclined to issue an Official Action other than the notice of allowance, applicant respectfully requests that the Examiner first contact applicant by telephone at the number listed below.

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Andrew D. Babcock